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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,453	11/14/2001	Terry Ping-Chung Lee	10016598-1	3978

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

DANG, KHANH NMN

ART UNIT	PAPER NUMBER
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2111

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/991,453

Applicant(s)

LEE, TERRY PING-CHUNG

Examiner

Khanh Dang

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/3/2002 Preliminary Amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, "those hot plug flags" lacks clear antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Wallach et al.

At the outset, it is noted that similar claims will be grouped together to avoid repetition.

As broadly drafted, these claims do not define any step that differs from Wallach et al.

With regard to claim 1, Wallach discloses a method for a computer having a peripheral component interconnect (PCI) system having a host bridge (208, for example) coupling a plurality of PCI slots ((PCI slots, see Fig. 3, for example) of a PCI bus to a processor (200, for example), the computer accessing base address registers (also address registers in Wallach, in full compliance with PCI specification) with firmware (in Wallach, software architecture is used to allow users to identify and replace failed components, upgrade outdated components, and add new functionality), and support the hot add and swap of off-the-shelf adapters), a method of identifying a failing PCI slot, comprising the steps of:

(a) creating a firmware maintained PCI resource allocation map in which addresses for PCI slots associated with the base address registers and sizes of address ranges (either the conventional 32 or 64 bit PCI slot with corresponding 32 or 64 bit BAR (Base Address Registers) for these addresses (also the BARs or Base Address Registers and sizes of address in Wallach) are mapped (resources are allocated by BIOS and mapped/configured by the configuration manager 500);

(b) updating the firmware maintained PCI resource allocation map upon the occurrence of at least of firmware being called to execute at least one of a hot plug operation and a PCI configuration space transaction (in Wallach, hot add and swap of off-the-shelf adapters are supported; the configuration manager 500 updates resource allocation when hot plug or swap occurs); and

(c) upon the host bridge logging an error address due to a failing PCI slot, identifying the failing PCI slot from the information in the firmware maintained PCI resource allocation

map (in Wallach, the user is notified by software/firmware which PCI slot/adaptor is failed. In fact, this action is required by PCI Hot Plug Specification. According to the specification, the Hot Plug Service activates the Attention Indicator at anytime to call a user's attention to a particular slot. For example, the Hot Plug Service may activate the Attention Indicator when the system detects problem conditions which require user intervention at the adaptor/slot. Further several form of slot identifications are required throughout the Hot Plug system. The first is the Physical Slot Identifier. The second form of slot identification is PCI bus and device number/address. The Hot Plug Driver is required to run the PCI configuration to query the slot status (Query Slot Status) and run the Configuration Routine). The third form of slot identification is the Logical Slot Identifier for uniquely identifying each slot).

With regard to claim 2, in Wallach, upon the occurrence of a hot plug operation for a PCI slot, a hot plug flag associated with that PCI slot is set (according the Hot Plug Specification, each slot has a Logical Slot Identifier, a parameter of Hot Plug Primitive which uniquely identifies a particular slot/hot plugged slot; and an Attention Indicator for indicating which slot/adaptor is hot plugged) and upon the host bridge logging an error address, invalidating the firmware maintained PCI resource allocation map entries associated with each PCI slot having its hot plug flag set (after hot plug, the space configuration manager must re-initialize the resource allocation, or in another word, invalidate the resource allocation map with the hot plug adaptor taken into consideration).

With regard to claim 3, see explanation regarding to claim 2 above. Further, it is clear that the Identifier/Indicator or flag must be cleared after address space is reconfigured/mapped by reconfiguration by space configuration manager 500.

With regard to claim 4, it is clear that the address of every slot must be accountable for and stored in a BAR after configuration. The failing slot can only be identified when its address is known address among slot addresses stored in the BAR.

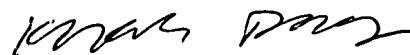
With regard to claims 5-7, the address size must be within address space (32 bit, for example). It is clear that when address bits of a adapter/slot do not fit in a 32 bit address space or 32 bit BAR, for example, then that failing slot cannot be identified. In another word, after all known address are accounted for after configuration (address size range is known and stored in 32 bit BAR), any failing slot address that does not fit in 32 bit address space cannot be identified and is therefore, "unknown."

With regard to claims 8 and 9, see explanation regarding to claims 1-3 above.

With regard to claims 10-13, see explanation above regarding to claims 1-9 above.

U.S. Patent Nos. 6,397,268 to Cepulis, 6,662,242 to Holm et al., 5,761,448 to Adamson et al., and 5,999,989 to Patel are cited as relevant art.

Any inquiry concerning this communication should be directed to Khanh Dang at telephone number 703-308-0211.



Khanh Dang  
Primary Examiner